Basel Committee
on Banking Supervision

Regulatory Consistency Assessment Programme (RCAP)

Assessment of Basel III regulations – Singapore

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Glossary

AMA	Advanced Measurement Approaches
AT	Additional Tier 1 Capital
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CAR	Capital Adequacy Ratio
CET1	Common Equity Tier 1 Capital
EL	Expected Loss
FSB	Financial Stability Board
IRB	Internal Ratings-based Approach (for credit risk)
LGD	Loss Given Default
MAS	Monetary Authority of Singapore
NPL	Non-Performing Loan
PD/LGD	Probability of default / Loss given default approach for equity exposures
PONV	Point of non-viability
RCAP	Regulatory Consistency Assessment Programme
RoE	Return on Equity
RWA	Risk-weighted Assets
SFT	Securities Financing Transactions
SGD	Singapore Dollar
SIG	Standards Implementation Group
SME	Small and Medium-sized Enterprises
UL	Unexpected Loss
VU	Variation of the underlying of the option

Preface

An assessment of the implementation of the capital standards under the Basel framework (Basel II, 2.5 and III) in Singapore was undertaken from July 2012 to March 2013. This was done under the Regulatory Consistency Assessment Programme (RCAP) of the Basel Committee and its Standards Implementation Group (SIG) with focus on Level 2 implementation.[1]

The RCAP Team was led by Mr Frank Pierschel of the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin).[2] The assessment process comprised three distinct phases: (i) preparatory phase (July to August 2012), (ii) assessment phase (September to December 2012), and (iii) review phase (January to March 2013). The assessment phase included an on-site visit to Singapore from 3 to 7 December 2012. During the on-site visit, the RCAP Team held discussions with various officials of the Monetary Authority of Singapore (MAS). A discussion was also held with senior representatives of locally incorporated banks in Singapore to get the industry's perspective on implementation of the capital standards under the Basel framework in Singapore. The RCAP Team sincerely thanks the staff of MAS for the whole-hearted and meaningful cooperation extended to the Team throughout the assessment process.

1 The RCAP was endorsed by the Group of Governors and Heads of Supervision in January 2012 and complemented by a recent review by the Basel Committee in December 2012. Assessments of Level 2 evaluate regulatory consistency of domestic regulations with the requirements of the Basel framework.

2 Full details of the RCAP Team are outlined in Annex 1.

Executive summary

The RCAP assessments evaluate whether a jurisdiction has implemented the Basel framework in a full, timely and consistent manner.[3] The RCAP comprises three levels of reviews to ensure: timely issuance of rules (Level 1), consistency of the existing local rules with Basel standards (Level 2) and consistency in measurement of risk-weighted assets (Level 3).

Status of Level 1 implementation

Overall, the assessment found that Singapore has put in place national regulations in a timely manner. The main regulation in this regard is MAS Notice 637 issued on 14 September 2012 and amended on 29 November 2012. The final rules implementing the Basel composition of capital disclosure requirements, which were published on 28 December 2012 after completion of the on-site assessment, were also considered for the assessment. The implementation of standards for capitalisation of banks' exposures to central counterparties has been postponed to 1 July 2013, though the final rules have been issued. Further details of all the domestic regulations implementing capital standards under the Basel framework issued by MAS are contained in Annex 2.

Status of Level 2 implementation

The assessment found that Singapore has put in place national regulations in accordance with the capital standards under the Basel framework. It was therefore assessed as being "compliant". The Singapore regulations were found to be compliant in 12 out of 14 components of the Basel framework (see Table 1 below).

Table 1: Summary assessment grading

Key components of the Basel framework	**Grade[4]**
Overall Grade	Compliant
Scope of application	C
Transitional arrangements	C
Pillar 1: Minimum capital requirements	
Definition of capital	C
Capital buffers (conservation and countercyclical)	C
Credit Risk: Standardised Approach	LC
Credit risk: Internal Ratings-based approach	LC
Credit risk: securitisation framework	C

3 For the purpose of this assessment, the term "capital standards under the Basel framework" includes all Basel II, 2.5 and Basel III documents listed in Annex 3.

4 Compliance assessment scale: C (compliant), LC (largely compliant), MNC (materially non-compliant) and NC (non-compliant). Definitions of the compliance scale are found in Section 1.3 of this report.

Counterparty credit risk rules	C
Market risk: standardised measurement method	C
Market risk: Internal Models Approach	C
Operational risk: Basic Indicator Approach and the Standardised Approach	C
Operational risk: Advanced Measurement Approaches	C
G-SIB additional loss absorbency requirements	N/A
Pillar 2: Supervisory Review Process	
Legal and regulatory framework for the Supervisory Review Process and for taking supervisory actions	C
Pillar 3: Market Discipline	
Disclosure requirements	C

It is noteworthy that as the assessment progressed, MAS used the review to amend its regulations to better reflect the intent of the capital standards under the Basel framework. Several deviations were identified by the RCAP Team during the off-site assessment phase. These identified deviations were progressively addressed by Singapore leaving only a few items detailed in part two of this report. Of these, the two findings of importance relate to the Standardised Approach for credit risk and the Internal Ratings-based Approach (IRB):

- In the Standardised Approach for credit risk, the MAS rules expand the list of eligible financial collateral to include structured deposits issued by a bank and on deposit with it. The RCAP Team views this inclusion of structured deposits in the list of eligible financial collateral as inappropriate since the structured deposits are not comparable to deposits treated as "cash" and have higher risk. However, given that the total amount of structured deposits issued by the locally incorporated banks in Singapore is about 2% of the total deposits, the potential for use of such deposits as financial collateral for bank loans is rather low. Therefore, in the RCAP Team's judgment, the impact of this deviation is not considered to be material.
- The definition of retail exposures as per MAS Notice 637 is at variance with that given in capital standards under the Basel framework in that it allows some exposures to individuals ineligible for retail exposure treatment to be risk weighted at 100% rather than being considered corporate exposures category under the IRB Approach. In addition, MAS rules do not restrict the residential mortgage treatment of retail exposures only to exposures to individuals that are owner-occupiers of the property. MAS Notice 637 also does not mention that banks' motivation of migration to IRB approaches should not be capital reduction. In the judgment of the RCAP Team, and taking account of the data received from banks, the aggregate impact of these deviations on the reported capital ratios is not material.

The RCAP Team was pleased that MAS is fully cognisant of the need for harmonised and consistent implementation of the capital standards under the Basel framework and its benefit in helping reduce negative macroeconomic impact on the financial system. For banks incorporated in Singapore, capital requirements have thus always been set higher than the Basel minimum requirements because MAS considers that each of the Singapore-incorporated banks is systematically important in Singapore. The reported capital positions of these banks have remained relatively resilient throughout the global financial crisis. Furthering the implementation practices relating to the Basel framework should help Singapore to safeguard long-term financial stability. The RCAP Team is appreciative of MAS's stated intent to take all necessary steps towards effective implementation of the Basel capital adequacy framework as it develops.

Response from the jurisdiction

Basel III is an important part of the global regulatory reforms to build a more resilient financial system. MAS is committed to these important reforms and to ensuring full, timely and consistent implementation of Basel III in Singapore. MAS fully supports the RCAP Level 2 review process on member jurisdictions' implementation of the Basel framework.

MAS thanks the assessment team for its observations in the area of credit risk. On MAS's rules relating to the standardised approach for credit risk, MAS has included structured deposits, which are bank deposits under the Singapore Banking Act and where these are issued by and on deposit with the bank, with a conservative standard supervisory haircut of 25%. In addition, the scope of eligible financial collateral in MAS's rules is stricter than in the Basel text as unrated debt securities issued by banks are not recognised.

We have also found the RCAP Level 2 review process useful in identifying areas where the Basel text is not explicit or is worded more broadly than the detailed implementation of the rules necessitates, and would benefit from further clarity, so as to achieve consistent implementation internationally. One area is the classification of exposures to individuals under the Internal Ratings-based Approach for credit risk, including whether residential mortgage loans to individuals that are not owner-occupiers are necessarily ineligible for classification as retail residential mortgage exposures.

The RCAP Level 2 assessment has been a very valuable experience for Singapore. The assessment team was highly knowledgeable, professional and fair. We thank them and the BCBS for helping us to validate our Basel III implementation efforts.

1. RCAP framework, assessment context and backdrop

This part of the report outlines the RCAP framework, scope of the assessment work, the methodology used and some structural elements used for the assessment.

1.1 RCAP framework

The implementation assessment programme comprises three levels of review:

- Ensuring the timely issuance of rules corresponding to the Basel framework by Basel Committee member countries (Level 1)

The objective of this evaluation is to ensure that the Basel framework[5] is transformed into law or regulation according to the agreed international timelines. It focuses on the domestic rule-making processes and does not include the review of the content of the domestic rules.[6]

- Ensuring consistency of the local rules with the Basel framework (Level 2)

The objective of this part of the evaluation is to assess the degree of compliance of domestic regulations implementing the Basel framework with the international minimum requirements defined by the Basel Committee. By identifying domestic regulations and provisions that are not consistent with the standards agreed by the Committee and by assessing their potential impact on financial stability and on the international level playing field, this process will promote full and consistent implementation of the Basel framework. It will also facilitate an effective dialogue among members and provide peer pressure if needed.

- Ensuring consistency in measurement of risk-weighted assets (Level 3)

The objective of this part of the evaluation is to ensure that the outcomes of the local rules implementing Basel framework are consistent in practice across banks and jurisdictions. As opposed to the first and second components, which focus on national rules and regulations, this part seeks to evaluate consistency in supervisory implementation at the bank level. This work is currently focusing on the review and validation of how banks calculate their risk-weighted assets (RWAs).

1.2 Scope of the assessment of Singapore

This assessment focused on the Level 2 phase of implementation of capital standards under the Basel framework in Singapore. The objective of the assessment was to ensure that domestic regulations in Singapore comply with the capital standards under the Basel framework in both letter and spirit. This was carried out based on two aspects:

- a comparison of domestic regulations with the capital standards under the Basel framework to identify if all the required provisions of these standards have been adopted (completeness of the regulation); and
- independent of the form of the requirements, whether there are any differences in substance between the domestic regulations and the capital standards under the Basel framework (consistency of the regulation).

[5] Capital standards under the Basel framework used for assessment are listed in Annex 3

[6] The documents comprising local regulations issued by MAS to implement Basel III are listed in Annex 4.

In carrying out the above, the RCAP Team considered all binding documents that effectively implement the Basel framework in Singapore as of 30 November 2012, the cut-off date for the assessment (Annex 4). The final rules implementing the Basel composition of capital disclosure requirements were published on 28 December 2012 after completion of the on-site assessment. They were also considered for the assessment as the draft rules contained in the relevant public consultation paper had been reviewed by the RCAP Team.

The assessment made use of data submitted for seven locally incorporated banks operating in Singapore. The data used included aggregate figures relating to the capital ratios, risk-weighted assets and exposures of these banks as well as figures relating to specific exposures intended to aid in assessment of materiality of the differences in the capital adequacy rules prescribed by MAS vis-à-vis the capital standards under the Basel framework. In addition, MAS provided information in response to many queries raised by the RCAP Team with a view to understanding MAS rules better. This report does not include any observation on the third component, ie the consistency in the measurement of risk-weighted assets by banks in Singapore.

1.3 Assessment grading and materiality

As per the standard methodology approved by the Basel Committee, the assessments, both at the level of each of the key components of the Basel framework and overall assessment of compliance by a jurisdiction, was summarised using a four-grade scale: compliant, largely compliant, materially non-compliant and non-compliant.[7] A regulatory framework is considered:

- *Compliant* with the Basel framework if all minimum provisions of the international framework have been satisfied and if no material differences have been identified which would give rise to prudential concerns or provide a competitive advantage to internationally active banks;
- *Largely compliant* with the Basel framework if only minor provisions of the international framework have not been satisfied and if only differences that have a limited impact on financial stability or the international level playing field have been identified;
- *Materially non-compliant* with the Basel framework if key provisions of the Basel framework have not been satisfied or if differences that could materially impact financial stability or the international level playing field have been identified; and
- *Non-compliant* with the Basel framework if the regulation has not been adopted or if differences that could severely impact financial stability or the international level playing field have been identified.

Materiality of a deviation was assessed in terms of its existing impact on the reported capital ratios of banks, thereby affecting the level playing field among international banks and/or raising any financial stability concerns. Wherever relevant and feasible, an attempt was made to quantify the impact of deviations with the help of data collected from all of the seven locally incorporated banks through MAS. In this process, due consideration was given to the number of banks having the relevant exposure, the size of exposures impacted, the range of impact and possibility of any rise in the relative proportion of the impacted exposures in the balance sheets of banks in the foreseeable future. As a general principle, the burden of proof lies with the assessed jurisdiction to show that a finding is not material or not potentially material. In cases where data was not relevant, the RCAP Team relied more heavily on

[7] This four-grade scale is consistent with the approach used for assessing countries' compliance with the Basel Committee's Core Principles for Effective Banking Supervision. The actual definition of the four grades has been adjusted to take into account the different nature of the two exercises. In addition, and as noted above, components of Basel III that are not relevant to an individual jurisdiction may be assessed as not applicable (N/A).

expert judgment to decide upon materiality. In such case, the RCAP Team made its best neutral judgments, but ultimately erred on the conservative side.

1.4 Assessment process

The assessment process comprised three distinct phases: preparation (July to August 2012), assessment (September to December 2012) and review (January to March 2013).[8] During the off-site phase, the RCAP Team identified 46 deviations which were communicated to MAS ahead of the on-site phase. On 29 November 2012, MAS brought about an amendment to MAS Notice 637 rectifying another 15 of the identified deviations.[9] 21 of the remaining deviations were clarified during the on-site assessment phase and found satisfactory by the RCAP Team. The RCAP Team's observations on three elements of Basel framework, as described in Annex 7, were not considered for grading as the Basel text is unclear regarding a consistent assessment. Additional guidance on these elements is being considered by the Basel Committee. These elements will be evaluated again and taken into account for grading the relevant components of the capital standards under the Basel framework during the follow-up RCAP of Singapore in due course (see Annex 8 for list of issues for follow-up assessment). The final grading therefore focussed on the seven remaining deviations (see Table 2 below).[10]

Table 2: Progress in rectifying deviations

	Number of deviations	
Off-site phase	Identified during the off-site phase	46
On-site phase	Rectified by 29 November amendment	15
	Resolved during on-site assessment	21
	Not considered in the assessment	3
	Remaining (discussed in the report)	7

Green cells: number of issues found compliant

The assessment process included discussions with various expert staff members of MAS. These discussions allowed the RCAP Team to reconcile the differences during the off-site assessment phase and provide MAS an opportunity to explain the rationale behind them.

A meeting was also held with senior representatives of locally incorporated banks in Singapore. The objective was to get their perspectives on implementation of the capital standards under the Basel framework in Singapore. The views exchanged were constructive and the overall industry view was positive about the MAS regulations. Concern was expressed that implementation delays in other jurisdictions could put Singapore banks at a disadvantage. This was particularly the case where domestic banks have to compete with branches of foreign banks from jurisdictions that have not adopted Basel III standards yet.

The bank representatives supported the Basel reforms and suggested that more effort could be placed on improving their communication. Many felt that implementation of Basel standards at the bank level posed several challenges. They called for the need to foster confidence by ensuring that the Basel standards are consistently applied globally. They also suggested that the three levels of implementation

[8] Various steps involved in the assessment process are listed in Annex 5.

[9] Please refer to Annex 6.

[10] Detailed findings are outlined in section 2 of this report.

should be speeded up so that the assessment findings relating to consistency of outcomes (Level 3) could be incorporated in the assessment process.

1.5 Assignment of assessment grades to Singapore

In accordance with the Basel guidance, a *component* grade reflects the degree of compliance at that level. In assigning a grade for a component, the RCAP Team took into account the number and materiality of deviations of the Singapore rules vis-à-vis the capital standards under the Basel framework. This materiality at the level of each component was assessed in terms of the extent to which deviations could result in reporting of capital ratios by banks that were higher than they would have been under the capital standards under the Basel framework. Super equivalence in certain areas did not influence the grading as it is based solely on minimum requirements under the Basel framework.

The RCAP Team took into account the rationale for any identified gaps and differences between the domestic provisions and the corresponding capital standards under the Basel framework, with a view to ensuring a firm understanding of the specificities and drivers of local implementation. However, these were not taken into account when assessing compliance as these local specificities may in some cases lead to results going beyond the scope of national discretion specified within the capital standards under the Basel framework. Domestic measures that strengthened the minimum requirements were treated as fully in line with the nature of the capital standards under the Basel framework, which are intended to set minimum requirements, and were therefore considered as "compliant". However, the RCAP Team did not consider whether stronger than minimum requirements could compensate for the identified shortcomings in the Singapore implementation.

For the assessment of the *overall* grade, the RCAP Team recognised Pillars 1, 2 and 3 as the main components of the capital adequacy framework and, within Pillar 1, definition of capital and all major risk areas as major sub-components. All Pillar 1 components other than two in the credit risk area were deemed as being compliant.[11] Pillars 2 and 3 were assessed as being "compliant". Therefore, the RCAP Team considers it appropriate to assign an overall "compliant" grade to Singapore.[12]

1.6 Relevant structural aspects of the Singapore banking sector

As of end-November 2012, a total of 123 institutions had a banking licence under the Banking Act of Singapore. Out of these, there are seven locally incorporated banks, while the remaining institutions operate as branches of foreign banks headquartered outside Singapore. Six of the locally incorporated banks are part of three local banking groups: DBS Bank, Overseas-Chinese Banking Corporation (OCBC) and United Overseas Bank (UOB). Citibank Singapore Limited (CSL) is the only locally incorporated bank that is a subsidiary of a foreign-headquartered bank. MAS Notice 637 has been issued pursuant to the Banking Act of Singapore and is legally binding on all locally incorporated banks.

DBS, OCBC and UOB are the only internationally active banking groups, and are not categorised as globally systemically important banks. CSL is largely focused on retail business in Singapore, and therefore is not internationally active. The total assets of DBS, OCBC and UOB (on a consolidated basis) stood at 96.0% of the aggregate total assets of all locally incorporated banks and 39% of the system's total assets as at 30 June 2012.

[11] Two components of credit risk, the Standardised Approach and IRB Approach, were graded as "largely compliant".

[12] RCAP Team took into account the fact that credit risk exposures constituted about 80% of the total RWAs of Singapore domestic banks and hence the grades in credit risk areas would have a greater impact on the overall grade than the grades in other risk areas. However, the RCAP Team is of the view that, on the whole, Singapore is compliant with about three-fourths of the framework and largely compliant with the remaining one-fourth.

MAS issued regulations for the advanced approaches for credit, market and operational risk at banks which were effective from 1 January 2008. Since implementing Basel II in January 2008, the three local banking groups have adopted IRB approach for measurement of the capital charge for credit risk, which is the major risk exposure undertaken by banks in Singapore. However, none of these banking groups have adopted the advanced approaches for measurement of other financial risks.[13]

As at Q3 2012, the three local banking groups had an average group Tier 1 Capital Adequacy Ratio (CAR) and total CAR of 14.3% and 17.4%, respectively. Bank profitability and asset quality were robust. Return on equity (RoE) and the non-performing loan (NPL) ratio have been stable over the past year, and were 12.0% and 1.3%, respectively, as at Q3 2012(see Table 3 below).

Table 3: Selected financial soundness indicators of local banking groups

Local banks'* selected financial soundness indicators (%)	**2009****	**2010****	**2011****	**Q1 2012**	**Q2 2012**	**Q3 2012**
Regulatory Capital to Risk-Weighted Assets (RWA)	17.3	18.6	16.0	16.5	15.8	17.4
Regulatory Tier I Capital to Risk-Weighted Assets (RWA)	14.1	15.5	13.5	13.6	13.4	14.3
Non-Bank NPLs to Non-Bank Loans	2.4	1.6	1.2	1.3	1.2	1.3
Return on Assets (simple average)	1.1	1.2	1.0	1.2	1.1	1.1
Return on Equity (simple average)	10.8	12.2	11.1	13.2	11.9	12.0

Source: Financial Stability Review, MAS, November 2012

* Local banks' consolidated operations

** Annual figures are as at Q4

The present state of health of Singapore banks would appear to place them in a good state to cope with the higher minimum capital requirements arising from adoption of Basel III. MAS is seeking to enhance the quality and amount of regulatory capital in Singapore banks under Basel III in the following ways:

(i) There will be an explicit CET1 capital adequacy requirement, to be set at 6.5% (as compared to the Basel III minimum of 4.5%). This will be fully phased in by 1 January 2015.

(ii) The Tier 1 capital adequacy requirement will be increased from the Basel III minimum of 6% to 8%, to be phased in over the same period. The total capital adequacy requirement will remain unchanged at 10%, which exceeds the Basel III minimum of 8%.

(iii) In addition to these minimum requirements, there will be a capital conservation buffer, set at 2.5%, to be met with CET1 and consistent with the Basel III minimum. This will be phased in between 1 January 2016 and 1 January 2019.

(iv) The new eligibility criteria for regulatory capital will be effective from 1 January 2013. The new regulatory adjustments will be phased in between 1 January 2014 and 1 January 2018.

With these changes, locally incorporated banks in Singapore will be required to meet capital requirements that are higher than the minimum levels in Basel III. In addition, they will be required to be maintained from 1 January 2013, two years ahead of the Basel Committee's 2015 timeline. The requirements will apply at both the group and solo levels. In its implementation of the Basel framework for the local banking groups, MAS has also undertaken steps for effective implementation across the significant foreign subsidiaries and branches of those groups via consolidated supervision.

[13] Additional financial indicators for the Singapore banking system are contained in Annex 9.

2. Detailed assessment findings

This part of the report details the component-by-component assessment of Singapore's compliance with the capital standards under the Basel framework.

2.1 Scope of application

Section grade	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel II paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.2 Transitional arrangements

Section grade	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel II paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.3 Pillar 1: Minimum capital requirements

2.3.1 Definition of capital

Section grade	Compliant
Summary	The deviations identified based on MAS Notice 637 of 14 September 2012 were corrected by MAS Notice 637 (Amendment) of 29 November 2012.[14]
Overview of findings by Basel II paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A

[14] Please refer to Annex 7.

Findings	N/A
Materiality	N/A

2.3.2 Capital buffers (conservation and countercyclical)

Section Grading	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.3.3 Credit risk: Standardised Approach

Section grade	Largely compliant
Summary	There is a deviation from the Basel standard relating to the recognition of structured deposits as eligible financial collateral under the MAS rules. Based on current conditions, in the judgment of the RCAP Team this deviation does not have a material effect.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	International convergence of capital measurement and capital standards, June 2006; II - Credit risk – The standardised approach, paragraph 145
Reference in the domestic regulation	Notice MAS 637, Annex 7F, Annex 7J & table 7J-1, Annex 2A for definition of structured deposit Regulation 2 of the Financial Advisors (Structured Deposits – Prescribed Investment Product and Exemption) Regulations 2005 for definition of structured deposit Deposit Insurance and Policy Owners' Protection Schemes Act 2011
Findings	Capital standards under the Basel framework recognise cash (as well as certificates of deposit or comparable instruments issued by the lending bank) on deposit with the bank which is incurring the counterparty exposure as one of the eligible financial collateral as a credit risk mitigant. MAS 637 rules specify structured deposits, in particular "dual currency investments", as one of the eligible financial collateral instruments. Dual currency investments[15] are defined as deposits under the Banking Act which are accepted in one currency and which may be repayable in another currency. The RCAP Team notes that the MAS rules apply a standard haircut of 25% to structured deposits which suggests that these deposits carry a risk of a change in their market/liquidation value. This is also supported by the fact that these deposits are not eligible for insurance cover under the Deposit Insurance and Policy Owners' Protection Schemes Act.[16] Taken together, this suggests that structured deposits are not comparable to cash

[15] "Dual currency investments" are defined under Regulation 2 of Financial Advisors (Structured Deposits – Prescribed Investment Product and Exemption) Regulations 2005.

[16] MAS provided information that the deposit insurance scheme is designed with the primary objective of protecting core savings of small depositors. Similar to some deposits such as foreign currency (ie non-SGD) deposits, structured deposits are not covered under the deposit insurance scheme.

	deposits. The RCAP Team views inclusion of the structured deposits in the list of eligible financial collateral as an inappropriate expansion of the list of such instruments specified by Basel standards.
Materiality	Since all structured deposits form around 2% of total deposits of the locally incorporated banks, the materiality of this deviation is low. However, if the amount of structured deposits increases and banks recognise a substantial portion as collateral, this could have a material impact in the future.

2.3.4 Credit risk: Internal Ratings-based Approach

Section Grading	Largely compliant
Summary	There are deviations from the capital standards under the Basel framework relating to the classification of exposures, and the rollout of the IRB approach. Also the treatment of residential mortgage loans by extending the credit to individuals has been discussed in this part. Further, the MAS rules are silent on the motivation of migration to IRB approaches. Based on current conditions, in the judgment of the RCAP Team none of these deviations or potential deviations is material.
Overview of findings by Basel paragraph(s):	
Basel Paragraph(s)	Basel II 218
Reference in the domestic regulation	MAS Notice 637 Part VII, paragraphs 7.4.14 and 7.4.15
Findings	Paragraphs 214 and 215 of the capital standards under the Basel framework require banks using the IRB framework to classify credit exposures as corporate, sovereign, bank, equity or retail. In cases where an IRB treatment is not specified, a risk weight of 100% is applicable, unless under the standardised approach a 0% risk weight is available. The Basel paragraph 218 defines corporate exposure as "in general, a debt obligation of a corporation, partnership or proprietorship." There is nothing that would restrict inclusion of individuals, even if managed on a pooled basis or if the lending bank uses retail methods of risk management. The definition of retail in paragraph 231 makes it clear that loans to individuals cannot always be classified as retail and discusses some instances in which they should be classified as corporate. MAS Notice 637 7.4.14 also requires classification of exposures into various IRB asset classes. Exposures that do not fall into these classes must be treated as another exposure under standardised rules, and receive a 100% risk weight. MAS Notice 637 7.4.15 includes within the corporate asset class exposures to individuals, which do not fall within any of the other asset classes under the IRB, but where: "...the Reporting Bank does not manage the exposure as part of a pool of similar exposures, has strong reasons for categorising such exposure under the corporate asset sub-class and such categorisation is consistent with the policies of the Reporting Bank for managing exposures." Exposures to individuals that do not meet these criteria and do not fall within any of the other asset classes under the IRB would therefore be subject to the 100% risk weight unless these are exposures approved by MAS to adopt the Standardised Approach. One effect of these criteria could be to disqualify exposures to individuals from corporate treatment. For example, it would disqualify an exposure if it were managed as part of a pool. The RCAP Team did not find anything in the Basel II text suggesting that management as a pool would disqualify an exposure from corporate treatment. Indeed, the rules for purchased receivables describe pooled management for corporate exposures. Paragraph 231 also prescribes corporate rather than retail

	treatment for assets that a bank might manage as a pool, such as residential retail properties that are not occupied by owners. MAS stated that various references in the Basel text[17] imply that exposures in the corporate asset class are to be managed individually, rather than as part of a pool of similar exposures. The RCAP Team agrees with MAS that some exposures to individuals should be classified as corporate. However, it is of the view that the criteria in 7.4.15 could result in the misclassification of an exposure to an individual as an "other asset" subject to a 100% risk weight, rather than as a corporate exposure under IRB.
Materiality	The effect of the deviation is difficult to assess, as exposures to individuals disqualified from corporate and therefore subject to a 100% risk weight may be of high or low quality. In the RCAP Team's opinion, it is unlikely to be material.
Basel Paragraph(s)	Basel II paragraph 231
Reference in domestic regulation	MAS Notice 637 Part VII, paragraph 7.4.16
Findings	Paragraph 231 states that residential mortgage loans are eligible for retail treatment so long as the credit is extended to an individual that is an owner-occupier of the property. Supervisors have some flexibility to allow buildings containing only a few rental units to be included as retail residential mortgages, otherwise they are treated as corporates. Paragraph 231 also states that loans secured by a single or small number of condominium or co-operative residential housing units in a single building or complex also fall within the scope of the residential mortgage category. MAS Notice 637 definition of residential retail mortgages in paragraph 7.4.16 does not mention owner occupancy, except through footnote 151B to this paragraph, which states that residential retail loans must be "originated and managed on a pooled basis by reference to standards that would be applied by the Reporting Bank to an individual that is an owner-occupier of the property. The credit assessment of such loans to individuals shall be based on the borrowers' independent capacity. Mortgages that meet the criteria of the [Specialised Lending] asset sub-class...shall be categorised as [Specialised Lending – Income-Producing Real Estate] exposures." Applying standards for origination and management that are applicable to owner occupiers does not necessarily result in the same behaviour as limiting eligibility to owner occupiers (unless owner occupancy is one of the standards). MAS has performed studies indicating that default rates for absentee owners are comparable to or lower than the default rates of owner-occupiers. However, this does not address the question of potential behaviour under severe stress, and the capital standards under the Basel framework about classification and risk weight curves do not explicitly provide banks or their supervisors with discretion to apply their own judgment on this issue. MAS points out that in Basel II paragraph 231, loans secured by a single or small number of condominium or co-operative residential housing units in a single building or complex also fall within the scope of the residential mortgage category. MAS is also of the view that while the capital standards under the Basel framework specify that loans secured with buildings with more than a few rental units are to be categorised as corporate exposures, the classification of residential mortgages to individuals that are not owner-occupiers is not clear. The RCAP Team does not see potential inclusion of a single or a small number of condominium or co-op units in the residential mortgage category as an exception to the principle of owner occupancy. It is rather an acknowledgement that sometimes an occupant owns an entire building with a few rental units and sometimes one or a few units in a larger development. It also believes that underwriting to the standards applied to owner occupied property to properties not occupied by owners may not result in the same risk characteristics for a portfolio as restriction to owner-occupied properties, as indicated by paragraph 231.

17 See Basel II paragraphs 241 and 365.

Materiality	The deviation was not considered to be material. MAS provided information for three banks indicating that reclassifying non-owner occupied property as corporate could either increase or decrease capital requirements. Classification as a corporate increases the AVC and introduces a maturity adjustment, both of which will increase capital requirements. However, corporate exposures are not subject to the required 10% floor applied to loss given default (LGD) for residential retail exposures. For one bank, the elimination of the LGD floor had a stronger effect than the other changes to the capital calculation. The strongest effect of reclassification on a bank would be a change of 18 basis points on its total capital ratio, and a change of 11 basis points on its CET1 capital ratio (both relative changes of slightly more than 1% assuming full impact of Basel III on capital positions).
Basel Paragraph(s)	Basel II paragraphs 258
Reference in domestic regulation	7.4.2. and Annex 7AC 1.4, 2.1, 1.3, 4.1 to 4.8
Findings	The capital standards under the Basel framework require that migration to IRB approaches should be driven by the practicality and feasibility of moving to the more advanced approaches, and not motivated by a desire to adopt a Pillar 1 approach that minimises its capital charge. MAS Notice 637 does not mention motivation of migration to IRB approaches. MAS has explained that the difference in language is because Notice 637 is a legally binding text that needs to be drafted clearly and precisely, whereas Basel text is not drafted as such. Without mentioning motivation, the MAS rules address many of the more obvious ways to implement IRB to reduce capital requirements. The MAS rules specify rollout requirements to minimise the risk of capital arbitrage, require approval of the rollout plan and require a timely roll out of IRB requirements across the bank, at least on initial application. That said, the RCAP Team is of the view that the MAS rules do not have a general motivation rule that would capture devious schemes not yet imagined.[18]
Materiality	Any assessment of materiality must speculate about future acquisitions and supervisory practice in the approval of implementation plans. In principle the regulations could permit a bank to delay implementation of IRB for an acquisition, but MAS has regulatory tools to address this (Pillar 2) and has shown that it can quickly change its regulations to address unforeseen situations. The deviation was not considered to be material.

2.3.5 Securitisation framework

Section Grading	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

[18] In accordance with the Secretariat's Note BS 12/114 "Basel implementation reviews – lessons learnt" dated 30 November 2012, all paragraphs of Basel framework constitute a benchmark. The RCAP Teams have to consider, whether not following the "should" and "expected to do" provisions leads to materially different capital outcomes across various jurisdictions.

2.3.6 Counterparty credit risk rules

Section Grading	Compliant
Summary	There is a deviation from the Basel standard relating to definition of securities financing transactions (SFT). However, it does not weaken the Basel standard, so this inconsistency has not been considered in the grading.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	Basel II Annex 4, I. Definition and general terminology
Reference in the domestic regulation	MAS Notice 637, Annex 2A Glossary
Findings	MAS Notice 637 defines SFT as follows: "SFT means a securities or commodities financing transaction comprising any one of the following : (a) a repo or a reverse repo; (b) a securities or commodities lending transaction or securities or commodities borrowing transaction; (c) a margin lending transaction." capital standards under the Basel framework, however, do not include commodities in the SFT definition. MAS maintained that the economic substance of commodities financing is similar to that of securities financing. On that basis, MAS is subjecting commodities financing to capital requirements for counterparty credit risk. In particular, in transactions involving lending of commodities, appreciation in the value could result in net exposure to the counterparty which needs to be capitalised. In response to the RCAP Team's question about whether for SFT transactions involving lending of cash against commodities the capital charge on the on-balance-sheet leg was calculated after netting of the haircut-adjusted value of collateral or on the gross amount of exposure to the borrower, MAS confirmed that banks are required to maintain capital on the gross amount as the commodities received as collateral was not considered as eligible financial collateral.
Materiality	Although there is an inconsistency between the MAS rules and the capital standards under the Basel framework, it does not weaken the Basel standard. In addition, the data from MAS shows that Singaporean banks are currently not conducting commodity financing. Therefore, this inconsistency has not been considered in the grading of this section.

2.3.7 Market risk: The Standardised Measurement Method

Section Grading	Compliant
Summary	For the standardised measurement method for market risk, the RCAP Team has identified one deviation. However, it is not considered in the grading.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	Basel II paragraph 718(Lviii) footnote 149, 718(Lvii)(ii)
Reference in the domestic regulation	MAS Notice 637 Part III paragraph 8.2.49, footnote 535 (c), paragraph 8.2.53 (c)
Findings	Basel paragraph 718 (Lviii) footnote 149 mentions that some options bear no specific risk but specific risk will be present in the case of options on certain interest rate-related instruments and for options on equities and stock indices. The charge under this measure for currency options will be 8% and for options on commodities 15%. The MAS rules, however, specify that the risk weight in respect for currency and gold options shall be 8% and the risk weight in respect of options on commodities shall be 15%. Basel paragraph 718 (Lxii) (ii) deals with calculation of capital charge for "Gamma

	risk" of options under the delta-plus approach. Although paragraph 8.2.49 of MAS Notice 637 deals specifically with the calculation of market risk capital requirement for options using the simplified approach, the use of the term "risk weight" under footnote 535(c) may be misinterpreted as referring to the multiplier of 8% under the delta-plus approach for the purpose of calculating VU.
Materiality	Even though MAS acknowledged the difference in wording, it provided proof that using the reporting template in Annex 12C, which is part of the legally binding rules, leads to an equivalent capital charge as required by the capital standards under the Basel framework. This inconsistency has not been considered in the grading of this section.

2.3.8 Market risk: Internal Models Approach

Section Grading	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.3.9 Operational risk: Basic Indicator Approach and the Standardised Approach

Section Grading	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.3.10 Operational risk: Advanced Measurement Approaches

Section Grading	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.4 Pillar 2: Supervisory review process

Section Grading	Compliant
Summary	No deviations were identified by the RCAP Team.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

2.5 Pillar 3: Market discipline

Section Grading	Compliant
Summary	The RCAP Team assessed all Pillar 3 disclosure requirements including the "Composition of Capital Disclosure Requirements" issued by the BCBS in June 2012, asking national authorities to give effect to these disclosure requirements by no later than 30 June 2013. The RCAP Team takes note that MAS issued Consultation Paper P021 – 2012 in November 2012 on "Proposed Amendments to MAS Notice 637 to Implement Composition of Capital Disclosure Requirements." The consultation period closed on 3 December 2012. No deviations were identified by the RCAP Team regarding the Pillar 3 requirements. The requirements of the June BCBS note had not become a final rule as at the 30 November 2012 cut-off date for this assessment, but were finalised on 28 December 2012. Compared to the draft, the final rule is similar by content. Therefore, the regulation can be regarded as compliant.
Overview of findings by Basel paragraph(s):	
Basel paragraph(s)	N/A
Reference in the domestic regulation	N/A
Findings	N/A
Materiality	N/A

Annexes

Annex 1: RCAP Team and reviewers

Team Leader:

Mr Frank Pierschel	Bundesanstalt für Finanzdienstleistungsaufsicht, Germany

Team Members:

Mr Elias Bengtsson	Sveriges Riksbank, Sweden
Mr Emmanuel Carrère	Autorité de Contrôle Prudentiel, France
Mr Ian Gibb	Office of the Superintendent of Financial Institutions, Canada
Mr Paul-Marie Majerus	Commission de Surveillance du Secteur Financier, Luxembourg
Ms Jiyoung Yang	Financial Supervisory Service, Korea

Supporting Members:

Mr Rajinder Kumar	Basel Committee Secretariat
Ms Melanie Poduschnik	Bundesanstalt für Finanzdienstleistungsaufsicht, Germany
Mr Stephan Strauß	Bundesanstalt für Finanzdienstleistungsaufsicht, Germany

Review Team Members[19]

Mr Karl Cordewener	Basel Committee Secretariat
Mr T. Kirk Odegard	SIG member, Board of the Federal Reserve System, United States
Mr Göran Lind	SIG member, Sveriges Riksbank, Sweden

[19] The Review Team is separate from the RCAP Team, and provides an additional level of quality assurance for the report's findings and conclusions. After the RCAP Team has completed its draft report, the Review Team conducts an independent review. Its feedback is provided to the RCAP Team for consideration prior to the finalisation of the report.

Annex 2: Level 1 implementation of the capital standards under the Basel framework in Singapore as of 30 November 2012

Basel III Regulation	Date of issuance by BCBS	Date of issuance by Singapore	Status
Basel II			Grade
Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version	June 2006	14 December 2007 (Replaced by revised notice MAS Notice 637 issued on 14 September 2012 to implement Basel III)	4
Basel 2.5			
Enhancements to the Basel Framework	July 2009	5 July 2010 and 5 July 2011 (Replaced by revised notice MAS Notice 637 issued on 14 September 2012 to implement Basel III)	4
Guidelines for computing capital for incremental risk in the trading book	July 2009	5 July 2011 (Replaced by revised notice MAS Notice 637 issued on 14 September 2012 to implement Basel III)	4
Revisions to the Basel II market risk framework	July 2009	5 July 2011 (Replaced by revised notice MAS Notice 637 issued on 14 September 2012 to implement Basel III)	4
Basel III[20]			
Basel III: A global regulatory framework for more resilient banks and banking systems –revised version	June 2011 (Consolidation of rules issued in December 2010 and January 2011)	14 September 2012	4
Pillar 3 disclosure requirements for remuneration	July 2011	16 December 2011 (Replaced by revised notice MAS Notice 637 issued on 14 September 2012 to implement Basel III)	4
Treatment of trade finance under the Basel capital framework	October 2011	16 December 2011 (Replaced by revised notice MAS Notice 637 issued on 14 September 2012 to implement Basel III)	4
Composition of capital disclosure requirements	June 2012	28 December 2012	3
Capital requirements for bank exposures to central counterparties	July 2012	29 November 2012 (To be implemented with effect from 1 July 2013)	3

20 The status of adoption of Basel III capital standards reflects the position as of 30 November 2012. Singapore has adopted Basel III capital standards from 1 January 2013. However, the regulations relating to capital requirements for bank exposures to central counterparties would be effective from 1 July 2013.

Number and colour code: 1 = draft regulation not published; 2 = draft regulation published; 3 = final rule published; 4 = final rule in force (ie the due date for implementation is over).

For rules which are due for implementation as on 31 December 2012

Green = implementation completed;

Yellow = implementation in process;

Red = no implementation.

For rules which are due for implementation after 31 December 2012

No colour

Annex 3: List of capital standards under the Basel framework used for the assessment

(i) *International Convergence of Capital Measurement and Capital Standards: A Revised Framework (Basel II),* June 2006

(ii) *Enhancements to the Basel II framework*, July 2009

(iii) *Guidelines for computing capital for incremental risk in the trading book*, July 2009

(iv) "Basel Committee issues final elements of the reforms to raise the quality of regulatory capital" Basel Committee press release, 13 January 2011

(v) *Revisions to the Basel II market risk framework: Updated as of 31 December 2010*, February 2011

(vi) *Basel III: A global regulatory framework for more resilient banks and banking systems*, December 2010 (revised June 2011)

(vii) *Pillar 3 disclosure requirements for remuneration*, July 2011

(viii) *Interpretive issues with respect to the revisions to the market risk framework,* November 2011

(ix) *Treatment of trade finance under the Basel capital framework*, October 2011

(x) *Basel III definition of capital – Frequently asked questions,* December 2011

(xi) *Composition of capital disclosure requirements: Rules text*, June 2012

(xii) *Capital requirements for bank exposures to central counterparties*, July 2012

(xiii) *Basel III counterparty credit risk – Frequently asked questions, November 2011,* July 2012, November 2012

Annex 4: Local regulations issued by MAS to implement Basel III

Type and Descriptions	Time of issuance
Regulation	
Directive for Bank Holding Company	February 2000
Banking (Corporate Governance) Regulations 2005	September 2005
MAS Notice 637 on Risk Based Capital Adequacy Requirements for Banks Incorporated in Singapore	September 2012
MAS Notice 637 (Amendment) 2012 to Implement Capital Requirements for Bank Exposures to Central Counterparties	November 2012
MAS Notice 637 (Amendment No. 2) 2012 to Implement Composition of Capital Disclosure Requirements	December 2012
Supervisory Guidelines	
Guidelines on Corporate Governance for Banks, Financial Holding Companies and Direct Insurers which are Incorporated in Singapore	December 2010

Hierarchy of rules in Singapore[21]

Acts: The Acts contain statutory laws under the purview of MAS which are passed by Parliament. These have the force of law and are published in the Government Gazette. Examples are the Banking Act and Financial Advisers Act.

Legislation: Subsidiary legislation is issued under the authority of the relevant Acts and typically fleshes out the provisions of an Act and spells out in greater detail the requirements that financial institutions or other specified persons (eg a financial adviser's representative) have to adhere to. Subsidiary legislation has the force of law and may specify that a contravention is a criminal offence. They are also published in the Government Gazette. Examples are the Insurance (Actuaries) Regulations and Finance Companies (Advertisements) Regulations.

Directions: Directions detail specific instructions to financial institutions or other specified persons to ensure compliance. They have legal effect, meaning that MAS could specify whether a contravention of a direction is a criminal offence. Directions consist of the following:

Directives Directives primarily impose legally binding requirements on an individual financial institution or a specified person.[22]

21 See www.mas.gov.sg/en/Regulations-and-Financial-Stability/Regulatory-and-Supervisory-Framework/Classification-of-Instruments-Issued-by-MAS.aspx

22 An exception relates to a certain class of instruments, Directives to Merchant Banks, which are essentially "Notices" for the purposes of this classification but, for historical reasons, are known as directives.

Notices Notices primarily impose legally binding requirements on a specified class of financial institutions or persons. Examples are the Notice to Banks (MAS 603) on Branches and Automated Teller Machines and Notice to Life Insurers (MAS 307) on Investment-linked Life Insurance Policies.

Guidelines: Guidelines set out principles or "best practice standards" that govern the conduct of specified institutions or persons. While contravention of guidelines is not a criminal offence and does not attract civil penalties, specified institutions or persons are encouraged to observe the spirit of these guidelines. The degree of observance with guidelines by an institution or person may have an impact on MAS' overall risk assessment of that institution or person. Examples are the Technology Risk Management Guidelines for Financial Institutions and Guidelines on Standards of Conduct for Insurance Brokers.

Annex 5: Details of the assessment process

A. Off-site evaluation

(i) Completion of a self-assessment questionnaire by MAS

(ii) Evaluation of the self-assessment by the RCAP Team

(iii) Independent comparison and evaluation of the domestic regulations issued by MAS with reference to Basel III documents issued by BCBS

(iv) Identification of observations as a result of steps (ii) and (iii)

(v) Refining of the list of observations based on clarifications provided by MAS

(vi) Assessment of materiality of deviations individually as well as collectively based on data wherever available and applicable

(vii) Forwarding of the list of observations to MAS

B. On-site visit by the RCAP Team to MAS

(viii) Discussion of individual observations with MAS

(ix) Meeting with local banks

(x) Assignment of section grades and overall grade based on aggregation of assessment of individual sections

(xi) Discussion with MAS and revision of findings to reflect the additional information received

(xii) Submission of the detailed findings to MAS with grades

(xiii) Receipt of comments on the detailed findings from MAS

C. Finalisation of the RCAP report

(xiv) Review of comments by the RCAP Team, finalisation of the draft report and forwarding it to MAS for comments

(xv) Review of MAS comments by the RCAP Team

(xvi) Review of the draft report by the RCAP Team constituted by SIG

(xvii) Review of the draft report by the Peer Review Board

(xviii) Reporting of findings to SIG by the team leader

(xix) Approval of the RCAP report by the BCBS

Annex 6: List of deviations rectified by amendment to MAS Notice 637 dated 29 November 2012

Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
Basel III 55	Part VI, 6.2.2 (f) footnote 57	In Basel III paragraph 55, incentives to redeem make a capital instrument ineligible for inclusion in Additional Tier 1 capital. BCBS FAQs from Dec 2011 specify what is considered an incentive to redeem, and state that conversion from a fixed to floating rate or vice versa is not in itself an incentive to redeem. MAS Notice 637, however, states that "a conversion from a fixed rate to a floating rate or vice versa will not be deemed an incentive to redeem." This could be interpreted as conversion always being allowed, regardless of the contractual terms of the conversion.	3b. The amendment to MAS Notice 637 alters Part VI, 6.2.2 (f) footnote 57 so that the wording is aligned with Basel III paragraph 55.
Basel III 96	Part VI, 6.5.5-6.5.6	Basel III paragraph 96 states that only capital instruments issued before 12 September 2010 qualify for the transitional arrangements specified in paragraph 94. MAS set the cut-off date at 14 September 2012 which was the date of issuance of the revised MAS Notice 637.	3h. The amendment changed the cut-off point for instruments to benefit from transitional arrangement to 12 September 2010. Thereby, MAS Notice 637 is fully compliant with Basel III paragraph 96.
Basel III Point of Non-viability (PONV)	Part VI, Annex 6B paragraphs 1.4-1.5	Basel III requires non-common equity Tier 1 and Tier 2 instruments to either be written off or converted into common equity upon the occurrence of a trigger event, being (a) determined to be non-viable by the relevant authority; or (b) if a public sector capital injection is made or equivalent support, without which the firm would have been non-viable, as determined by the relevant authority. MAS Notice 637 maintains criteria similar to (a), but has added an additional reference to a public announcement being made to criteria (b).	3j. In the amendment to MAS Notice 637 Part VI, Annex 6B paragraphs 1.4-1.5, the wording relating to public announcement is deleted. Hence, MAS Notice 637 is now aligned with Basel III PONV requirements.
Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012

Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
Basel II 234(d)	Part VII, paragraph 7.4.16(b)(v)	As per the capital standards under the Basel framework, banks must demonstrate that the use of the qualifying revolving retail exposure (QRRE) risk-weight function is constrained to portfolios that have exhibited low volatility of loss rates, relative to their average level of loss rates, especially within low-PD bands. MAS Notice 637 differs from the capital standards under the Basel framework as it requires the bank to demonstrate that the exposures categorised under the QRRE asset sub-class, taken in aggregate as well as on an individual segment basis, exhibit a volatility of loss rates that is lower than the average volatility of loss rates for the other retail exposures asset sub-class.	The 29 November 2012 amendment to MAS Notice 637 amends paragraph 7.4.16(b)(v). The revised paragraph now reads "the Reporting Bank demonstrates to the satisfaction of the Authority that the exposures categorised under this asset sub-class, taken in aggregate as well as on a sub-portfolio basis, exhibit a low volatility of loss rates, relative to their average level of loss rates, especially within the low PD bands." The revised paragraph is now aligned with Basel II requirements.
Basel II 322	Annex 7Z 4.2	Basel II paragraph 322 allows national supervisors to define certain short-term exposures not captured by paragraph 321 as short-term and exempt from the one-year floor to maturity. It mentions repo-style transactions but not securities financing transactions (SFTs) in general. Paragraph 4.2 of Annex 7Z exempts "... any one of the following exposures that is transaction-oriented, has an original maturity of less than one year and does not form part of the ongoing financing of an obligor by a Reporting Bank – (a) any OTC derivative transaction; (b) any SFT;"	The 29 November amendment to MAS Notice 637 amends Annex 7Z 4.2 by changing (a) and (b) to "(a) any OTC derivative transaction and margin lending transaction; (b) any repo-style transaction (ie repo, reverse repo, securities lending or securities borrowing transaction);" The changed paragraph complies with Basel II. MAS Notice 637 is now aligned with Basel II requirements.
Basel II 414	Annex 7AB Paragraph 3.9(a)	Basel II paragraph 414 states that although the time horizon used in PD estimation is one year, banks are expected to use a longer time horizon in assigning ratings. Annex 7AB, paragraph 3.9(a) had stated the bank shall use a time horizon of one year or more in assigning ratings.	The 29 November amendment to MAS Notice 637 amends Annex 7AB to provide clarity that the bank shall use a time horizon of longer than one year in assigning ratings. MAS Notice 637 is now aligned with Basel II requirements.
Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012

Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
Basel II 594	Not found	Basel II paragraph 594 describes a maximum capital requirement for a bank subject to early amortisation treatment of position. MAS Notice 637 did not incorporate such a cap.	The 29 November amendment inserts paragraph 7.6.47A to provide the maximum capital requirement for a bank subject to early amortisation provision. MAS Notice 637 is now aligned with Basel II.
Basel II 689(iii)	8.1.12(b)	As per capital standards under the Basel framework, term trading-related repo-style transactions may be included in the trading book. In the MAS rule, however, a different terminology of "exposure due to any SFT" has been used. "Any SFT" is a broader concept compared to a repo-style transaction.	Part VIII - The amendment to MAS Notice 637 dated 29 November 2012 alters as follows: By deleting the words "and SFTs" in footnote 501 of paragraph 8.1.1 and substituting the words "repo-style transactions (ie repo, reverse repo, securities lending or securities borrowing transactions) and other transactions booked in the trading book"; By inserting the footnote number "503A" immediately after the words "include the following in its trading book" in paragraph 8.1.12 and the following footnote: (footnote 503); and By deleting sub-paragraph(b) of paragraph 8.1.12 and renumbering subparagraph (c) and (d) as sub-paragraphs (b) and (c) respectively. MAS Notice 637 is now aligned with Basel II requirements.
Basel II 703	Annex 7F 2.4	Capital standards under the Basel framework allow the use of all instruments in the trading book as eligible collateral for repo-style transactions. Paragraph 2.4 Annex 7F of MAS 637 allows the use of all instruments in the trading book (save re-securitisations) as collateral in the case of any pre-settlement counterparty exposures arising from an SFT which is included in the trading book.	29 November amendment to Annex 7F substitutes "repo-style transaction (ie repo, reverse repo, securities lending or securities borrowing transaction)" for SFT. MAS Notice 637 is now aligned with Basel III requirements.
Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
Basel II Annex 4, paragraph 5	Annex 2A Definition of OTC derivatives transaction	As per capital standards under the Basel framework, other common characteristics of the transaction to be covered under Annex 4 may include: re-margining may be employed. However, the MAS definition of OTC derivatives contains "not subject to daily re-margining requirements."	Annex 2A of Part II The amendment to MAS Notice 637 dated 29 November 2012 revises Annex 2A of Part II, the definition of "OTC derivative transaction" by deleting the words "and not subject to daily re-margining requirement" MAS Notice 637 is now aligned with Basel II requirements.

Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
Basel II, Annex 4, paragraph 2	Annex 2A Definition of SFT	As per capital standards under the Basel framework, the definition of SFTs includes the clause "where the value of the transactions depends on market valuations and the transactions are often subject to margin agreements."	Annex 2A of Part II The amendment to MAS Notice 637 dated 29 November 2012 revises Annex 2A of Part II, the definition of SFTs by including the clause. MAS Notice 637 is now aligned with Basel II requirements.
Basel II Annex 4, paragraph 64	Annex 7Q	As per capital standards under the Basel framework, supervisors will require that banks seeking to make use of internal models to estimate expected positive exposure (EPE) meet requirements regarding, for example, the integrity of the risk management system, the skills of staff that will relay on such measures in operational areas and in control functions, the accuracy of models, and the rigour of internal controls over relevant internal processes.	Annex 7Q The amendment was made to reflect more closely the language used in the Basel text to avoid ambiguity. By inserting immediately after the word "impose" in paragraph 1.2 of Annex 7Q, the words, "The Authority may require a period of initial monitoring and live testing of the Reporting Bank's models under the CCR internal models method before approving the Reporting Bank's adoption of the CCR internal models method for regulatory capital purposes" and By elaborating in new paragraph 8.20 of Annex 7Q the criteria of use of internal models to estimate EPE MAS Notice 637 is now aligned with Basel III requirements.
Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
CCP 122	Draft Annex 7AJ, paragraph 3.5 footnote 414	As per capital standards under the Basel framework, clearing member banks may apply a risk weight to their default fund contributions determined according to a risk sensitive formula that considers (i) size and quality of a qualifying CCP's financial resources, (ii) the counterparty credit risk exposures of such CCP, (iii) the application of such financial resources via the CCP's loss bearing waterfall, in the case of one or more clearing member defaults. The description of the formula was not found in MAS' consultation draft of the amendments for capitalisation of CCP exposures.	To reflect the first sentence of Basel paragraph 122, footnote 414 was added: "Method 1 considers the size and quality of a qualifying CCP's financial resources, the counterparty credit risk exposures of such CCP, and the application of such resources via the CCP's loss bearing waterfall, in the case of one of more clearing member defaults." The final CCP rules in MAS Notice 637 are aligned with Basel III requirements.
CCP 124	Draft Annex 7AJ, paragraph 3.2 (d)	As per capital standards under the Basel framework, the CCP, bank, supervisor or other body that did the calculations should make available to the home supervisor of any bank clearing member sufficient aggregate information about the composition of the CCP's exposures to clearing members and information provided to the	To reflect Basel CCP paragraph 124 more closely, and require that such information is to be made available to the home bank regulatory agency of the Reporting Bank, where the Reporting Bank is a subsidiary of a banking institution incorporated outside Singapore, paragraph 3.2(e) was inserted in Annex 7AJ of MAS

Basel paragraphs	MAS Notice 637 paragraph(s)	Brief description of the difference	Paragraph(s) and changes made in the amendment to MAS 637 dated 29 November 2012
		clearing member for the purposes of the calculation of KCCP, DFCM, and DFCCP. However, as per MAS' consultation draft of the amendments for capitalisation of CCP exposures, such aggregate information is proposed to be made available to MAS. This may not reflect the intention of capital standards under the Basel framework to have a regulation which enables the home supervisors of the foreign banking subsidiaries operating in the host jurisdictions to have such information.	Notice 637. The final CCP rules in MAS Notice 637 are aligned with Basel III requirements.
CCP 123(1) (i)	Draft Annex 7AJ, paragraph 3.7 (a)	As per capital standards under the Basel framework, each exposure amount is the counterparty credit risk exposure amount a CCP has to a clearing member, calculated as a bilateral trade exposure for OTC derivatives and exchange traded derivatives. But MAS' consultation draft of the amendments for capitalisation of CCP exposures mentioned OTC derivatives transactions and long settlement transactions.	To reflect Basel CCP paragraph 123(1)(i). The amendment to MAS Notice 637 dated 29 November 2012 incorporates the term "exchange traded derivatives" in the final paragraph 3.7(a), in line with the Basel text.

Annex 7: Deviations not considered in the assessment

The deviations below were not considered as the Basel text is unclear regarding a consistent assessment.

Credit risk: Internal Ratings-based Approach

Basel Paragraph(s)	Basel II 231, 273
Reference in domestic regulation	MAS Notice 637 Part VII, paragraph 7.4.15, paragraph 7.4.16,7.4.22
Findings	In various places capital standards under the Basel framework are expressed in euros. The size threshold for retail treatment, for treatment as a SME, and the adjustment to asset value correlation (AVC) for SMEs are set in MAS Notice 637 with a conversion rate of two Singapore dollars to the euro. This reflects the exchange rate in 2008 when Basel II standards first came into effect in Singapore. The current exchange rate is approximately 1.6 Singapore dollars to the euro. It is not evident whether the Basel II framework was intended to specify limits for every country that would change in local currency based on the fluctuating value of the euro. However, if correct implementation calls for formulas and thresholds in local currency converted from euros at current exchange rates, the MAS Notice 637 rules permit retail treatment for exposures that are higher than the threshold calculated using the current exchange rate, and give a greater reduction to the AVC factor for SMEs, reducing capital requirements. For SME exposures, the implications of this question depend on the amount of any change in exchange rates, and the IRB estimates used in the calculations – of which probability of default (PD) is the most important. Supposing that the correct exchange rate for the calculation is 1.6:1 and the bank uses 2:1, capital requirements could be understated by a few per cent for the SME exposures in question. For a bank with substantial exposures to other asset classes, the effect on the capital ratio would be minuscule. A larger shift in exchange rates would imply larger deviations from capital requirements than if they had been calculated in euros. Classification of an exposure as other retail rather than corporate SME can have a very large impact on capital requirements, depending on maturity and PD. In extreme cases, the capital requirement under SME treatment can be more than twice the capital requirement under retail. The effect on the bank capital ratio will of course depend on the portion of exposures affected by potential reclassification.
Materiality	As the capital standards under the Basel framework is silent on whether jurisdictions are expected to reset the exchange rate, the inconsistency was not taken into account for grading pending the needed clarification to the relevant Basel text.
Basel Paragraph(s)	Basel II paragraphs 367, 468
Reference in domestic regulation	MAS Notice 637 Annex 7W 1.4, 2.13, and Annex 7AB 5.6(a)
Findings	Paragraph 367 describes two top-down approaches that may be most useful for purchased corporate receivables but is permitted also for purchased retail receivables. It stipulates that under either approach, the LGD used cannot be less than the long-run default-weighted average LGD and the requirements of paragraph 468 with respect to downturns must be respected. MAS Notice 637 Annex 7W specifies the requirements that a bank must adhere to in using the top-down approach for purchased receivables. Paragraph 1.4 of the Overview section within this Annex requires a bank to ensure that the method used under the top-down approach meets the requirements of Annex 7AB, Section 5,

	which covers the requirements of Basel II paragraph 468. Paragraph 2.13(a) in the following section of Annex 7W states that a bank may extract LGD from EL by dividing by PD with no specification that the requirements of Annex 7AB, Section 5 are to be met. Footnote 313A to paragraph 2.13 of Annex 7W states that the LGD used can be no less than the long-run default-weighted average LGD, in line with Basel II paragraph 367, but a long-run default-weighted average LGD is insufficient if LGD tends to rise with default rates. MAS points out that paragraph 2.13(a) in 7W and footnote 313A are in the same Annex 7W as the paragraph 1.4 that requires observance of Annex 7AB section 5 (equivalent to paragraph 468 of Basel II). Therefore, any bank reading paragraph 2.13(a) or the footnote 313A should be aware of paragraph 1.4. The RCAP Team agrees, and observes that the Basel text itself is not sufficiently clear in this regard. That said, a "notwithstanding 2.13(a) and footnote 313A" would help clarify paragraph 1.4.
Materiality	MAS states that banks report minimal purchased receivables. MAS further reported that no bank uses the top-down approach for purchased retail or corporate receivables exposures. A top-down approach uses an average PD for a heterogeneous pool, and this tends to generate higher levels of capital than the RCAP Team would see if individual PDs were used. While not directly related to downturn LGD, this effect may mitigate any understatement of capital arising from potential non-observance of Annex 7W paragraph 1.4 when banks apply paragraph 2.13(a). The inconsistency was not taken into account for grading pending the needed clarification to the relevant Basel text. In any case, the deviation was also not considered to be material.

Market risk: The Standardised Measurement Method

Basel paragraph(s)	N/A
Reference in the domestic regulation	MAS Notice 637 paragraph 8.1.14
Findings	MAS Notice 637 paragraph 8.1.14 provides guidance on the appropriate capital treatment for positions that a bank might classify as an internal hedge although Basel does not mention this. MAS explained that paragraph 8.1.14 does not set out criteria for the recognition of internal hedges for regulatory capital purposes, but instead prohibits a bank from using internal hedges to avoid or reduce regulatory capital that the bank would otherwise be required to maintain. Capital standards under the Basel framework do not provide sufficient clarity with regard to the capital treatment of internal hedges and their inclusion as part of the trading book for regulatory capital purposes.
Materiality	It is included here as an item that would benefit from more clarity in the Basel framework. The inconsistency was not taken into account for grading pending the needed clarification to the relevant Basel text.

Annex 8: List of issues for follow-up assessment

The RCAP Team has identified the issues mentioned below for follow-up assessment:

1. All issues listed in paragraphs 2.3.3 and 2.3.4 of the report which have been taken into account in grading of Standardised Approach and Internal Ratings-Based Approach for credit risk.
2. All issues listed in Annex 7 of the report that were not taken into account for grading pending the needed clarification to the relevant Basel text.

Annex 9: Important financial indicators of Singapore banking system

Size of banking sector[23]	
Assets of Singapore banks/Banking system assets	39%
Total assets Singapore-incorporated banks (SGD, bn)	915.8
Total assets of internationally active banks (SGD, bn)	877.0
Total capital of internationally active banks (SGD, bn)	77.8
Number of banks	
Number of banks with banking license under Banking Act	123
Number of Singapore-incorporated banks	7
Number of internationally active Singapore-incorporated banks[24]	6
Capital standards under the Basel framework	
Number of banks required to implement Basel-equivalent standards	7
Year when first bank moved to IRB approach (or when this is foreseen)	2008
Per cent of internationally active banks under the IRB approach	100%
Per cent of internationally active banks under the AMA for operational risk	0
Capital adequacy (data as per 30 June 2012)	
Total capital (SGD, bn)	82.6
Total Tier 1 capital (SGD, bn)	71.1
Total CET1 capital (SGD, bn, based on full impact under Basel III)	61.8
Total risk-weighted assets (SGD, bn)	511.4
RWAs for credit risk (Per cent of total RWAs)	82.46%
RWAs for market risk (Per cent of total RWAs)	10.84%
RWAs for operational risk (Per cent of total RWAs)	6.70%
Capital Adequacy Ratio (weighted average)	16.14%
Tier 1 Ratio (weighted average)	13.91%
CET1 Ratio (weighted average, based on full impact under Basel III)	11.39%

[23] Data in the table is based on the group consolidated operations of DBS, OCBC, UOB, and Citibank Singapore Limited. The MAS did not further add the capital and RWAs of the three locally incorporated bank subsidiaries of the local banking groups as these would be consolidated in the group level data.

[24] This forms part of the three internationally active banking groups.